

IN THE CLAIMS:

1-26. **(Cancel)**

27. **(New)** A method for operating a direct injection diesel internal combustion engine, which is operated in a first operating region corresponding to low to medium load in such a way that combustion of the fuel takes place at a local temperature below the temperature of NO_x formation and with a local air ratio above a ratio at which particulates are formed, and in which fuel injection is initiated at a crank angle of between 50° to 5° before top dead center of a compression phase and exhaust gas is recirculated at an exhaust gas recirculation rate of 50% to 70%, wherein in a second operating region corresponding to medium partial load, fuel injection is started in a range from approximately 2° crank angle before top dead center to approximately 20° crank angle after top dead center.

28. **(New)** The method according to claim 27, wherein fuel injection is started in a range of approximately 2° crank angle before top dead center to approximately 10° crank angle after top dead center.

29. **(New)** The method according to claim 27, wherein exhaust gas is recirculated in the second operating region at an exhaust gas recirculation rate between 20% and 40%.

30. **(New)** The method according to claim 27, wherein fuel injection in the second operating region uses an injection pressure of at least 1,000 bar.

31. **(New)** The method according to claim 27, wherein fuel injection in the first operating region uses an injection pressure between 400 to 1,000 bar.

32. **(New)** The method according to claim 27, wherein in the first operating region a main part of combustion lies in a range of -10° to 10° crank angle before top dead center.

33. **(New)** The method according to claim 27, wherein in a third operating region corresponding to high partial load or full load, start of the main part of fuel injection occurs in a range from -10° to 10° crank angle after top dead center.

34. **(New)** The method according to claim 33, wherein in the third operating region multiple injection is used.

35. **(New)** The method according to claim 33, wherein in the third operating region the exhaust gas recirculation rate is 30% at most.

36. **(New)** The method according to claim 33, wherein in the third operating region the exhaust gas recirculation rate is 10% to 20%.

37. **(New)** The method according to claim 33, wherein the effective mean pressure in the third operating region is at least 5.5 bar.

38. **(New)** The method according to claim 33, wherein the effective mean pressure in the third operating region is at least 6 bar.

39. **(New)** The method according to claim 27, wherein a overall air ratio lies between 1.0 and 2.0.

40. **(New)** The method according to claim 27, wherein exhaust gas recirculation is performed externally or internally.

41. **(New)** The method according to claim 27, wherein a swirl value is varied in at least one operating region depending on load and engine speed.

42. **(New)** The method according to claim 27, wherein a swirl value is varied in all operating regions depending on the load and engine speed.

43. **(New)** The method according to claim 27, wherein an effective compression ratio is varied by shifting a closing time of at least one intake valve.

44. **(New)** The method according to claims 27 or 33, wherein at least in the first and/or third operating region internal exhaust gas recirculation is performed by opening the intake valve during the exhaust phase.

45. **(New)** The method according to claims 27 or 33, wherein at least in the first and/or third operating region internal exhaust gas recirculation is performed by opening the exhaust valve during the intake phase.

46. **(New)** The method according to claim 27, wherein changeover from the first to the second operating region, respectively from the second to the first operating region, is initiated by reducing, respectively increasing, the exhaust gas recirculation rate.

47. **(New)** The method according to claim 27, wherein changeover from the first to the second operating region or vice versa is initiated by reducing the internal or external exhaust gas recirculation

rate and by delaying the start of injection, respectively by increasing the exhaust gas recirculation rate and moving the start of injection forward.

48. **(New)** The method according to claim 27, wherein a decrease of the required exhaust gas recirculation rate on changing from the first to the second operational region is achieved by backshifting the opening and/or closing time of the intake valve.

49. **(New)** The method according to claim 27, wherein the effective mean pressure in the first operating region is between 0 to 6 bar.

50. **(New)** The method according to claim 27, wherein the effective mean pressure in the first operating region is between 0 to 5.5 bar.

51. **(New)** The method according to claim 27, wherein the effective mean pressure in the second operating region is between 3.5 to 8 bar.

52. **(New)** The method according to claim 27, wherein the effective mean pressure in the second operating region is between 4 to 7 bar.

53. **(New)** A direct injection diesel engine with a fuel injection system and an exhaust gas recirculation system, wherein a start of fuel injection may be varied in at least one operating region between 50° before top dead center and 20° after top dead center and wherein an exhaust gas recirculation rate may be varied between 0 and 70%.

54. **(New)** The internal combustion engine according to claim 53, wherein the fuel injection may be varied up to 50% after top dead center.

55. **(New)** The internal combustion engine according to claim 53, wherein the fuel injection pressure may be varied at least between a first and a second pressure level.

56. **(New)** The internal combustion engine according to claim 55, wherein the first pressure level covers a range of up to 1,000 bar and the second pressure level covers a range of at least 1,000 bar.

57. **(New)** The internal combustion engine according to claim 53, wherein a device is provided for a changing of the swirl level.

58. **(New)** The internal combustion engine according to claim 53, wherein a device is provided for a changing of an opening and/or closing time of at least one intake valve.

59. **(New)** The internal combustion engine according to claim 53, wherein a valve timing of an intake valve and/or an exhaust valve may be shifted by means of a phase shifting device.

60. **(New)** An internal combustion engine according to claim 59, wherein at least one intake valve can be activated during an exhaust phase.

61. **(New)** An internal combustion engine according to claim 59, wherein at least one exhaust valve can be activated during the intake phase.